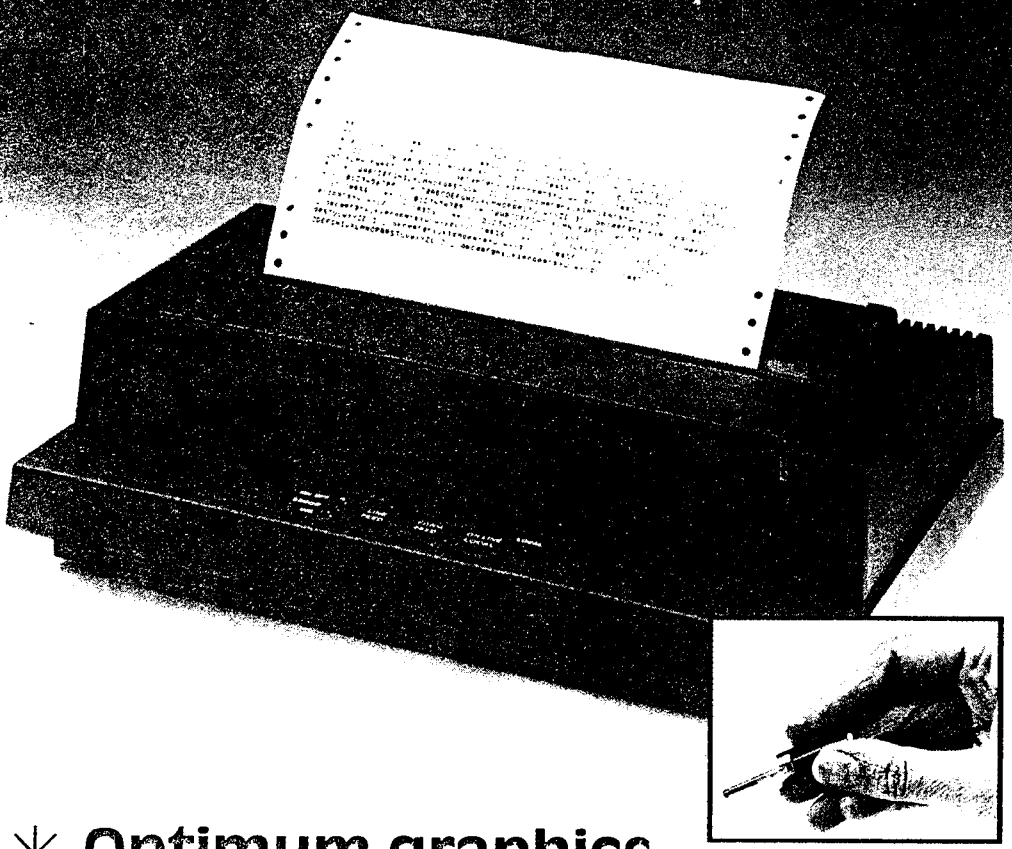
The Revolutionary 'Spark-Jet' Printer

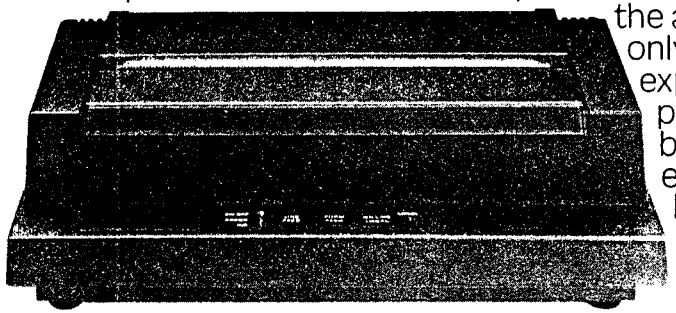


'Spark' Ink Jet

- ✳ Optimum graphics
- ✳ Minimum moving parts
- ✳ Virtually noiseless
- ✳ 50 lines per minute
- ✳ Single dot addressable
- ✳ Bi-directional
- ✳ 800 dot horizontal resolution

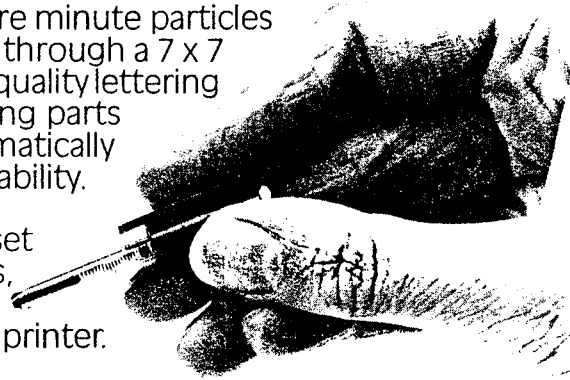
ONLY £365 + VAT

The JPI is a nc mpact 'spark ink-jet' printer using the l st dry- ink printi technology for fast, clean, virtually nois ss printing. The printer is suitable for both personal and business use and has all the advanced features normally only found in much more expensive machines. All printing is logic-seeing and bi-directional and can be executed in normal, double height, double width and underlined characters. The high resolution graphics are easily available and have a horizontal resolution of 110 pixels per inch and a vertical resolution of 216 pixels per inch. All printer functions are controlled by the Printer's own microprocessor which can hold a complete screen of information at a time in its memory. This means the user can release the information to the printer instantly and continue using the computer whilst the screen contents are printed.



The 'Spark-jet'

The heart of the JPI printer is an advanced serial-matrix printhead. Electronic impulses fire minute particles of the carbon rod at high speed through a 7 x 7 dot matrix producing very high-quality lettering and graphics. There are no moving parts within the head itself which dramatically reduces noise and improves reliability.



Character Set

The JPI has a 96 ASCII character set with 8 different national variants, each available by sending the appropriate control code to the printer.

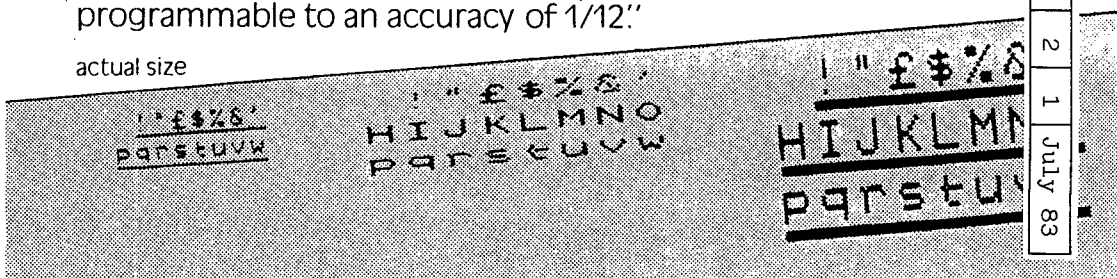
Character Spacing

The printer has several modes these include 80 columns (1/10'' spacing) 96 columns (1/12'' spacing) 132 columns (1/16'' spacing) Each character is printed in a 7 x 7 matrix.

Vertical Tabulation

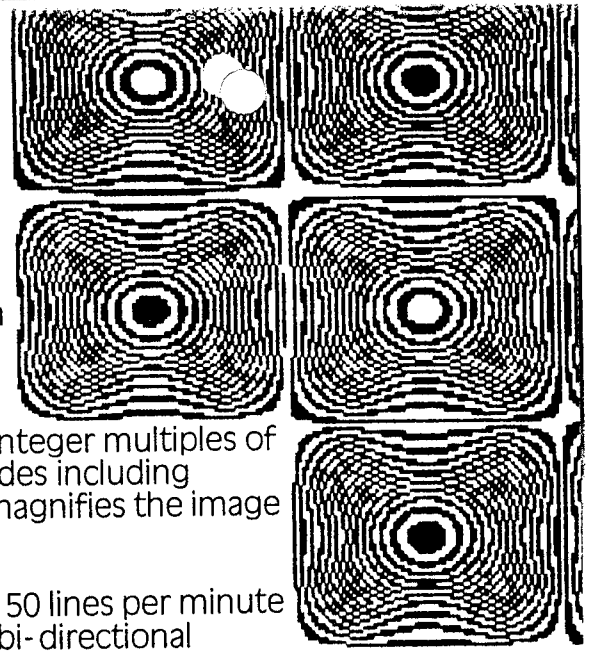
The vertical tabulation can be easily set to either 1/6'' or 1/8'' or is programmable to an accuracy of 1/12''.

actual size



Print Modes
The JPI has several programmable print modes including Normal, Double width, Double Height and underlined. It also has several print sizes, these are 10 CPI 12 CPI 18 CPI

Graphics Mode
The JPI is capable of high resolution graphics and plotting. It has a horizontal resolution of 110 pixels per inch or 880 per line, the vertical resolution is 216 pixels per inch or integer multiples of this. It also has several graphics modes including normal, reverse and zoom (which magnifies the image by a factor of 2).


actual size

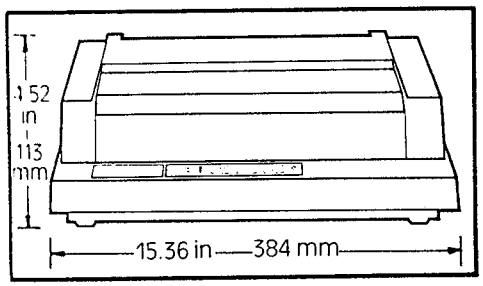
Print Speed
The JPI has a fast printing speed of 50 lines per minute or 83 characters per second. It has bi-directional printing. With shortest path seeking capability.

Paper
The JPI can accept either paper rolls or continuous, fan-fold stationary (8" or 9" pin-to-pin).

Printer Buffer
The JPI has a 1K buffer with "buffer nearly full" warning when 75% of the buffer has been filled.

Console and Light Signals
There are three keys on the console for local control of the printer. i.e. line feed, form feed and local mode. There are also several indicators and warning lights. On/off, Error, Local and Ink.

Physical Dimensions
Height: 4.52 in (113 mm) Width: 15.36 in (384 mm)



Depth: 9.92 in (248 mm)
Weight: 11.44 lbs (5.2 Kg)

Electrical Characteristics
Voltage: 100, 115, 120, 220, 240
Frequency: 50 or 60 Hz
Power consumption: 35 watts

Operating Environment
Operating temperatures: 5°C to 40°C.
Relative humidity: 10% to 85%

Interfaces
An 8-bit Centronics parallel interface with data strobe, busy and acknowledged handshaking is fitted as standard.

Paper
Maximum Width 12in.

ACORN COMPUTERS LTD. ENGINEERING INFORMATION SHEET

EQUIPMENT
SINGLE DISC DRIVE

HEIGHT (mm)
90

WIDTH (mm)
155

FROM: T.G. Scotchel
PROJECT LEADER

ORDER CODE
AND 01

PART NUMBER
003,700

DEPTH (mm)
240

MATERIAL
Aluminium

TO:
CUSTOMER SERVICES
SALES
ACCOUNTS
R & D MANAGER
CHIEF ENGINEER
PRODUCT SERVICES
GROUP LEADER

FUNCTION
Provide program and data storage for BBC Microcomputer

COLOUR
BBC computer cream painted

CONSTRUCTION
2 piece folded metal assembly, secured by screws, 4 rubber feet

OPERATES WITH (Peripherals)
BBC Microcomputer Models B (ANB 03) with disc interface
and Model B (ANB 04) with disc and net interface

CONTROLS (Switches, pots., keyboards)
None

SIMILAR EQUIPMENT
Dual disc drive (AND 02)

INDICATORS (Meters, lamps, readouts, audible)
Drive active LED on drive front panel

MAJOR COMPONENTS
One full height, single sided, single track density (48 TPI)
5¼ inch floppy disc drive; i.e. 1 diskette surface
Fitted connection cables

SIGNAL CONNECTIONS (V,A,Z, Baudrates, frequencies, connector type)
34 way flat ribbon cable with IDC socket to plug on to Model B disc interface connector. Standard mini-floppy interface. See appendix.

DESCRIPTION OF OPERATION
Files are loaded and saved to and from the BBC Microcomputer under control of the Disc Filing System ROM and the 8271 disc controller chip in the Microcomputer. A catalogue for each disc surface is maintained by the DFS on the first two sectors of that surface.

POWER IN (V,A,W,Hz,Connector type)
Power cable to connect to Model B disc power socket on SMPS. 5v DC @ 500mA, 12v DC @ 750mA

POWER OUT (V,A,W,Hz, Connector Type)
None

APPROVALS (BS,FCC,CSA, UL,VDE,BEAB)
None

GUARANTEE
6 months

OPERATING TEMPERATURE (°C)
10° - 30°C

WEIGHT (KG) UNIT ONLY 2.04

WEIGHT (KG) INC. PACKAGING & ACCESSORIES 2.2

CAPACITY
100 Kbytes formatted

FORMAT
Soft sectored, similar to IBM 3740
40 tracks, 10 sectors per track
256 data bytes per sector

PACKAGING
Cardboard carton with preformed cardboard to contain the disc unit. Plus any packaging in the drive as delivered from vendor.

ACCESSORIES INCLUDED
DFS Manual
Utilities diskette, 40 track

SPEED (operating frequency)
Data rate 125 kbits/second

INSTALLATION
Dealer or User. Check drive characteristic links on keyboard are correct and remove any packaging in drive.

APPENDICES
1. Standard mini-floppy interface details

DRAWING NUMBER
003,700/E

ISSUE	1			
DATE	10.82			

APPROVED FOR PRE-PRODUCTION RELEASE
CH. ENG.

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FORM ISSUE 1 10.2.83

5 2 1 1 July 83

ACORN COMPUTERS LTD. ENGINEERING INFORMATION SHEET

EQUIPMENT 40 Track Disc Drive Utilities Kit	HEIGHT (mm) 15	WIDTH (mm) 150	FROM: Alan Fournier PROJECT LEADER
ORDER CODE ANJ 02 / PART NUMBER 003,601	DEPTH (mm) 210	MATERIAL N/A	TO: CUSTOMER SERVICES SALES ACCOUNTS R & D MANAGER CHIEF ENGINEER PRODUCT SERVICES GROUP LEADER
FUNCTION To supply necessary operating instructions and software utilities to disc drive users.	COLOUR N/A	CONSTRUCTION N/A	
OPERATES WITH (Peripherals) BBC 40 Track Disc Drive	CONTROLS (Switches, pots., keyboards) N/A		
SIMILAR EQUIPMENT 80 Track Disc Drive Utilities Kit	INDICATORS (Meters, lamps, readouts, audible) N/A		
MAJOR COMPONENTS 40 Track Utilities Disc Disc System User Guide	SIGNAL CONNECTIONS (V,A,Z, Baudrates, frequencies, connector type) N/A		
DESCRIPTION OF OPERATION N.B. These items are supplied with 40 track BBC Microcomputer system disc drives purchased from Acorn Computers.	POWER IN (V,A,W,Hz,Connector type) N/A	POWER OUT (V,A,W,Hz, Connector Type) N/A	
	APPROVALS (BS,FCC,CSA, UL,VDE,BEAB) N/A	GUARANTEE 6 months	
	OPERATING TEMPERATURE (°C) N/A	WEIGHT (KG) UNIT ONLY 0.170 WEIGHT (KG) INC. PACKAGING & ACCESSORIES 0.340	
CAPACITY N/A / FORMAT N/A	PACKAGING Cardboard Stiffener Shrink Wrap Jiffy Bag	ACCESSORIES INCLUDED None	
SPEED (operating frequency) N/A / INSTALLATION User	APPENDICES N/A	DRAWING NUMBER 003,601/E ISSUE 1 DATE 2.83	APPROVED FOR PRE-PRODUCTION RELEASE CH. ENG.

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5 2 2 1 July 83

ACORN COMPUTERS LTD. ENGINEERING INFORMATION SHEET

EQUIPMENT
DUAL DISC DRIVE

HEIGHT (mm)
90

WIDTH (mm)
155

FROM: T. G. Scotcher
PROJECT LEADER

ORDER CODE
AND 02

PART NUMBER
003,900

DEPTH (mm)
240

MATERIAL
Aluminium

TO:
CUSTOMER SERVICES
SALES
ACCOUNTS
R & D MANAGER
CHIEF ENGINEER
PRODUCT SERVICES
GROUP LEADER

FUNCTION
Provide program and data storage for BBC Microcomputer

COLOUR
BBC computer cream painted

CONSTRUCTION
2 piece folded metal secured by screws
4 rubber feet

OPERATES WITH (Peripherals)
BBC Microcomputer Models B (ANB 03) with disc interface
and Model B (ANB 04) with disc and net interface

CONTROLS (Switches, pots., keyboards)
None

SIMILAR EQUIPMENT
Single disc drive (AND 01)

INDICATORS (Meters, lamps, readouts, audible)
Drive active LED on each drive front panel

MAJOR COMPONENTS
Two slimline double sided, double track density (96 TPI)
5¼ inch floppy disc drives, i.e. 4 diskette surfaces
Fitted connection cables

SIGNAL CONNECTIONS (V,A,Z, Baudrates, frequencies, connector type)
34 way flat ribbon cable with IDC socket to plug on to Model B disc interface connector.
Standard mini-floppy interface, see appendix

DESCRIPTION OF OPERATION
Files are loaded and saved to and from the BBC Microcomputer under control of the disc filing system ROM and the 8271 disc controller chip in the Microcomputer. A catalogue for each disc surface is maintained by the DFS on the first two sectors of that surface.

POWER IN (V,A,W,Hz,Connector type)
Power cable and connector Model B disc power socket on SMPS, 5v DC @ 620mA, 12v DC @ 1200mA

POWER OUT (V,A,W,Hz, Connector Type)
None

APPROVALS (BS,FCC,CSA, UL,VDE,BEAB)
None

GUARANTEE
6 months

OPERATING TEMPERATURE (°C)
10 - 30°c

WEIGHT (KG) UNIT ONLY 2.6

WEIGHT (KG) INC. PACKAGING & ACCESSORIES 2.9

CAPACITY
200 Kbytes formatted per surface
i.e. 800k total

FORMAT
Soft sectored similar to IBM 3740
80 tracks per surface
10 sectors per track
256 data bytes per sector

PACKAGING Cardboard carton with preformed cardboard to contain the disc unit. Plus any packaging in the drive as delivered from vendor.

ACCESSORIES INCLUDED
DFS Manual
Utilities diskette, 80 track

SPEED (operating frequency)
Data rate 125 Kbits/second

INSTALLATION
Dealer or User. Check drive characteristic links on keyboard are correct. Remove any packaging in drive

APPENDICES
1. Standard mini-floppy interface circuit

DRAWING NUMBER
003,900/E

ISSUE	1
DATE	10.82

APPROVED FOR PRE-PRODUCTION RELEASE
CH. ENG.

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FORM ISSUE 1 10.2.83

5 2 3 1 July 83

ACORN COMPUTERS LTD. ENGINEERING INFORMATION SHEET

EQUIPMENT 80 Track Disc Drive Utilities Kit	HEIGHT (mm) 15	WIDTH (mm) 150	FROM: Alan Fournier PROJECT LEADER
ORDER CODE ANJ 03 / PART NUMBER 003,602	DEPTH (mm) 210	MATERIAL N/A	TO: CUSTOMER SERVICES SALES ACCOUNTS R & D MANAGER CHIEF ENGINEER PRODUCT SERVICES GROUP LEADER
FUNCTION To supply necessary operating instructions and software utilities to disc drive users.	COLOUR N/A	CONSTRUCTION N/A	
OPERATES WITH (Peripherals) BBC Dual 80 Track Disc Drives	CONTROLS (Switches, pots., keyboards) N/A		
SIMILAR EQUIPMENT 40 Track Disc Drive Utilities Kit	INDICATORS (Meters, lamps, readouts, audible) N/A		
MAJOR COMPONENTS 80 Track Utilities Disc Disc System User Guide	SIGNAL CONNECTIONS (V,A,Z, Baudrates, frequencies, connector type) N/A		
DESCRIPTION OF OPERATION N.B. These items are supplied with 80 track BBC Microcomputer system disc drives purchased from Acorn Computers.	POWER IN (V,A,W,Hz,Connector type) N/A	POWER OUT (V,A,W,Hz, Connector Type) N/A	
	APPROVALS (BS,FCC,CSA, UL,VDE,BEAB) N/A	GUARANTEE 6 months	
	OPERATING TEMPERATURE (°C) N/A	WEIGHT (KG) UNIT ONLY 0.170 WEIGHT (KG) INC. PACKAGING & ACCESSORIES 0.340	
CAPACITY N/A / FORMAT N/A	PACKAGING Cardboard Stiffener Shrink Wrap Jiffy Bag	ACCESSORIES INCLUDED None	
SPEED (operating frequency) N/A / INSTALLATION User	APPENDICES N/A	DRAWING NUMBER 003,602/E ISSUE 1 DATE 2.83	APPROVED FOR PRE-PRODUCTION RELEASE CH. ENG.

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2.5 DISK DRIVES APPROVED BY ACORN:

The following disk drives are approved by Acorn for use in their Disc System products for the BBC Microcomputer and Eurocard Systems:

40 Track, Single sided, full height:

Tandon TMS100-1

Shugart SA405 (When modified as per Shugart Euroregion 1 technical memo 24/1/83)

Olivetti FD501

40 Track, Single sided, half height:

Astec TC/FD55A(1)/S/110 - Astec cased Teac drive

80 Track, Double sided, full height (Eurocard Systems):

YE Data YD280
Tandon TMS100-4
Olivetti FD592

80 Track, Double sided, half height (BBC microcomputer):

Mitsubishi M4853

This list is only intended to indicate the drives we have tested and approved and that may appear from time to time in Acorn product. The list should not be considered as recommendation or approval of any product marketed by any third party, nor should any omission be considered to indicate any prejudice to any product.

ACORN COMPUTERS LTD. ENGINEERING INFORMATION SHEET

EQUIPMENT JP101 Printer		HEIGHT (mm) 113	WIDTH (mm) 384	FROM: Alan Fournier. PROJECT LEADER
ORDER CODE AJP 01	PART NUMBER 003,014	DEPTH (mm) 248	MATERIAL Plastic	TO: CUSTOMER SERVICES SALES ACCOUNTS R & D MANAGER CHIEF ENGINEER PRODUCT SERVICES GROUP LEADER
FUNCTION Dry ink, spark ink jet printer. Full ASCII character and graphics capability.		COLOUR Black	CONSTRUCTION ----------	

OPERATES WITH (Peripherals)

System Versatile Interface Board. Acorn Atom with printer interface.
BBC Microcomputer (except model A)

CONTROLS (Switches, pots., keyboards) On line/Local switch

Form Feed switch. Line Feed switch.
Power on/off switch. Intensity of print pot.

SIMILAR EQUIPMENT

Sekoshia GP100

INDICATORS (Meters, lamps, readouts, audible)

LEDs for: On/Off, Local, Error, Ink
Audible startup and error warning

MAJOR COMPONENTS

Complete printer

SIGNAL CONNECTIONS (V,A,Z, Baudrates, frequencies, connector type)

36 way Delta
Connector to standard Centronics format (8 bit data, data strobe, busy and acknowledge included)

DESCRIPTION OF OPERATION

Dependent upon hardware and software being used in conjunction.
For examples see:

BBC User Guide
View User Guide
System 5 Manual
Atom User Guide

POWER IN (V,A,W,Hz,Connector type)

240v. 50HZ. 35w. moulded lead

POWER OUT (V,A,W,Hz, Connector Type)

None

APPROVALS (BS,FCC,CSA, UL,VDE,BEAB)

To BS415 1979

GUARANTEE

6 months

OPERATING TEMPERATURE (°C)

5 to 40

WEIGHT (KG) UNIT ONLY 5.2 Kg

WEIGHT (KG) INC. PACKAGING & ACCESSORIES

CAPACITY

1k printer buffer

FORMAT

Plain paper or 8 or 9 inch tractor feed paper

PACKAGING

Cardboard box
2 x polystyrene end pieces

ACCESSORIES INCLUDED

Manual.
Dust cover
10 x ink jets
Connector cable
Paper roll holder assy.

SPEED (operating frequency)

50 lines/minute
83 characters/second

INSTALLATION

User

APPENDICES

DRAWING NUMBER					APPROVED FOR PRE-PRODUCTION RELEASE
003,014/E					CH. ENG.
ISSUE	1				© COPYRIGHT 1983 ACORN COMPUTERS LTD.
DATE	11.2.83				

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FORM ISSUE 1 10.2.83

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ACORN COMPUTERS LTD. ENGINEERING INFORMATION SHEET

FOR INTERNAL USE ONLY

EQUIPMENT
DATA CASSETTE RECORDER

HEIGHT (mm)
62

WIDTH (mm)
270

FROM: S. Parsons
S. E. PARSONS. PROJECT LEADER

ORDER CODE
ANF-03

PART NUMBER
003,980

DEPTH (mm)
173

MATERIAL
Injection moulded plastic

TO:
CUSTOMER SERVICES
SALES
ACCOUNTS
R & D MANAGER
CHIEF ENGINEER
PRODUCT SERVICES
GROUP LEADER

FUNCTION
Program and data storage on up to C60 type audio cassette tape

COLOUR
Top - BBC computer cream
Bottom - black

CONSTRUCTION
Two part plastic case with battery compartment and carrying handle

OPERATES WITH (Peripherals)
BBC Microcomputer - all models
Also other Acorn products and audio use

N.B. Type *TAPE on disc and Econet machines

CONTROLS (Switches, pots., keyboards)
6 key mechanism for "pause", "play", "stop and eject", "fast forward", "rewind" and "record"
Slider controls for volume and tone

SIMILAR EQUIPMENT
None

INDICATORS (Meters, lamps, readouts, audible)
Record Level/battery level meter, (-20 to +3 dB)
Tape position counter with reset button
650 mW loudspeaker for audible monitor

MAJOR COMPONENTS
Casing, cassette mechanism, internal mains power supply, electronics on PCB

SIGNAL CONNECTIONS (V,A,Z, Baudrates, frequencies, connector type)
7 pin DIN for input/output/motor control (motor controlled when plugged in)
Input signal range from -20dB to +10dB (0dB = 60mV RMS)
Output signal 275mV RMS fixed (nominal)
3.5 mm loudspeaker/earphone jack socket (mutes speaker when inserted)

DESCRIPTION OF OPERATION
Mono cassette recorder with motor control facility
Auto stop on play and record
Fixed level audible monitor on record
Variable level audible monitor on playback does not affect signal to computer
Also useable for audio but no microphone facilities

POWER IN (V,A,W,Hz,Connector type)
240v, 50Hz AC, 8 watts
OR 4 x HP11 1.5 volt cells

POWER OUT (V,A,W,Hz, Connector Type)
None

APPROVALS (BS,FCC,CSA, UL,VDE,BEAB)
To conform to BS415 double insulated ~~and to meet BEAB requirements~~

GUARANTEE
6 months

OPERATING TEMPERATURE (°C)
-10 to +45°C

WEIGHT (KG) UNIT ONLY 1.6 kg

WEIGHT (KG) INC. PACKAGING & ACCESSORIES 1.8 kg

CAPACITY
Approx. 30 Kbytes/side on C15
Approx. 120 Kbytes/side on C60

FORMAT
300 or 1200 baud computer user tape standard 1200 and 2400 Hz tones

PACKAGING
Plastic bag
Polystyrene end pieces
Cardboard carton

ACCESSORIES INCLUDED
Earpiece with 3.5 mm jack plug (to mute speaker). 7 pin DIN to DIN lead, Mains lead, 2 core. User Manual

SPEED (operating frequency)
4.75 cm/second -2% to +3%
Fast forward and rewind in 100 seconds for C60

INSTALLATION
User plug in

APPENDICES
None

DRAWING NUMBER
003,980/E

APPROVED FOR PRE-PRODUCTION RELEASE
CH. ENG.

ISSUE	1			
DATE	5.83			

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4.2 BBC DATA RECORDER CIRCUIT DIAGRAMS AND SCHEMATA

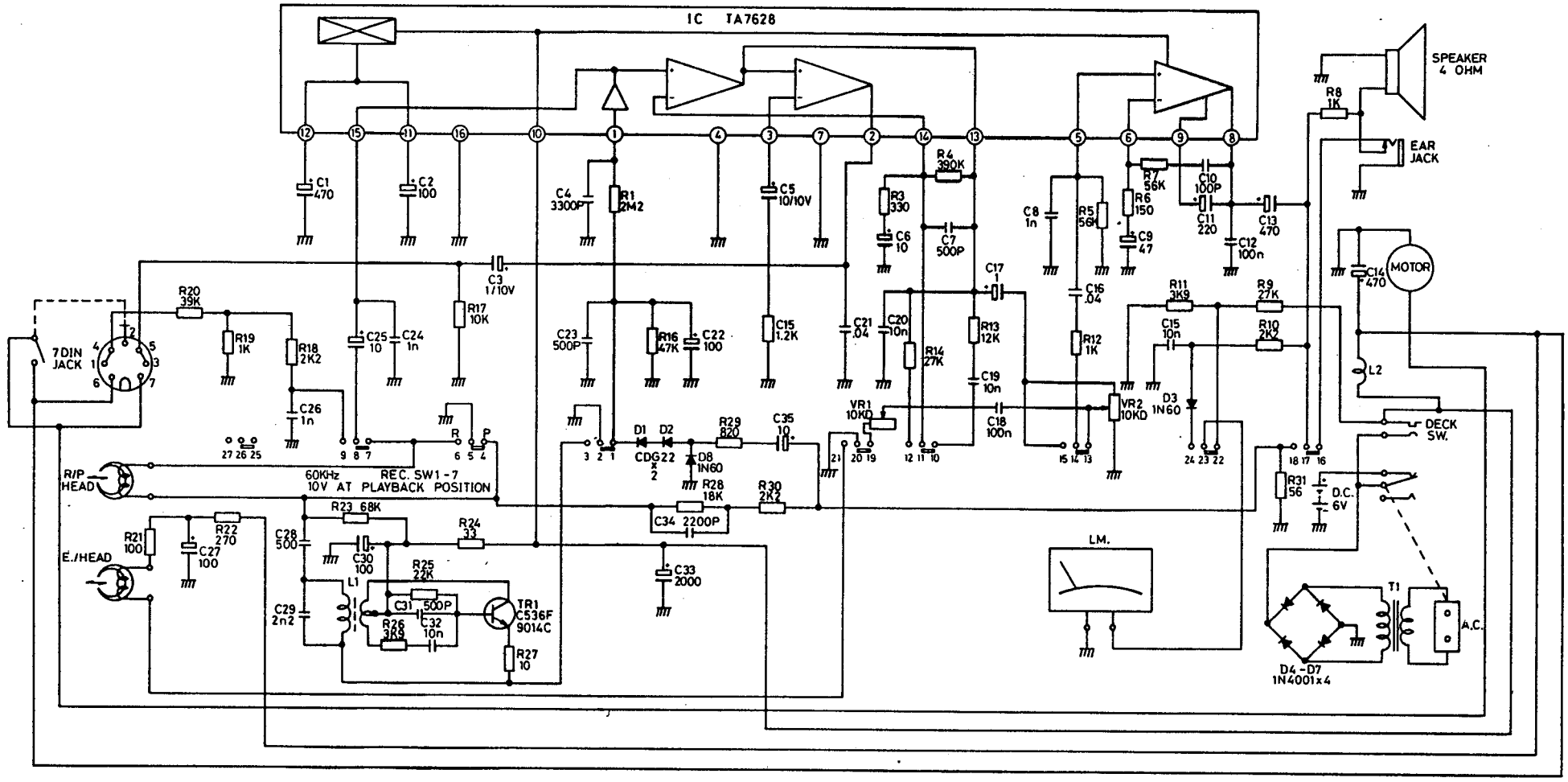
The following pages contain various diagrams which may be of use to you. (Please note that at present we do not supply any spare parts for this machine).

Page	Diagram
5.4.2.2	Schematic diagram
5.4.2.3	Wiring diagram
5.4.2.4	Component layout

5	4	2	2	July 84

SCHEMATIC DIAGRAM

MODEL : ANF 03



NOTES:

1. ALL RESISTORS UNIT ARE IN OHM. (1K=1,000 ; 1M=1,000K)
2. ALL CAPACITORS UNIT ARE IN MFD. UNLESS OTHERWISE SPECIFIED.

* DO NOT SCALE THIS DRAWING *

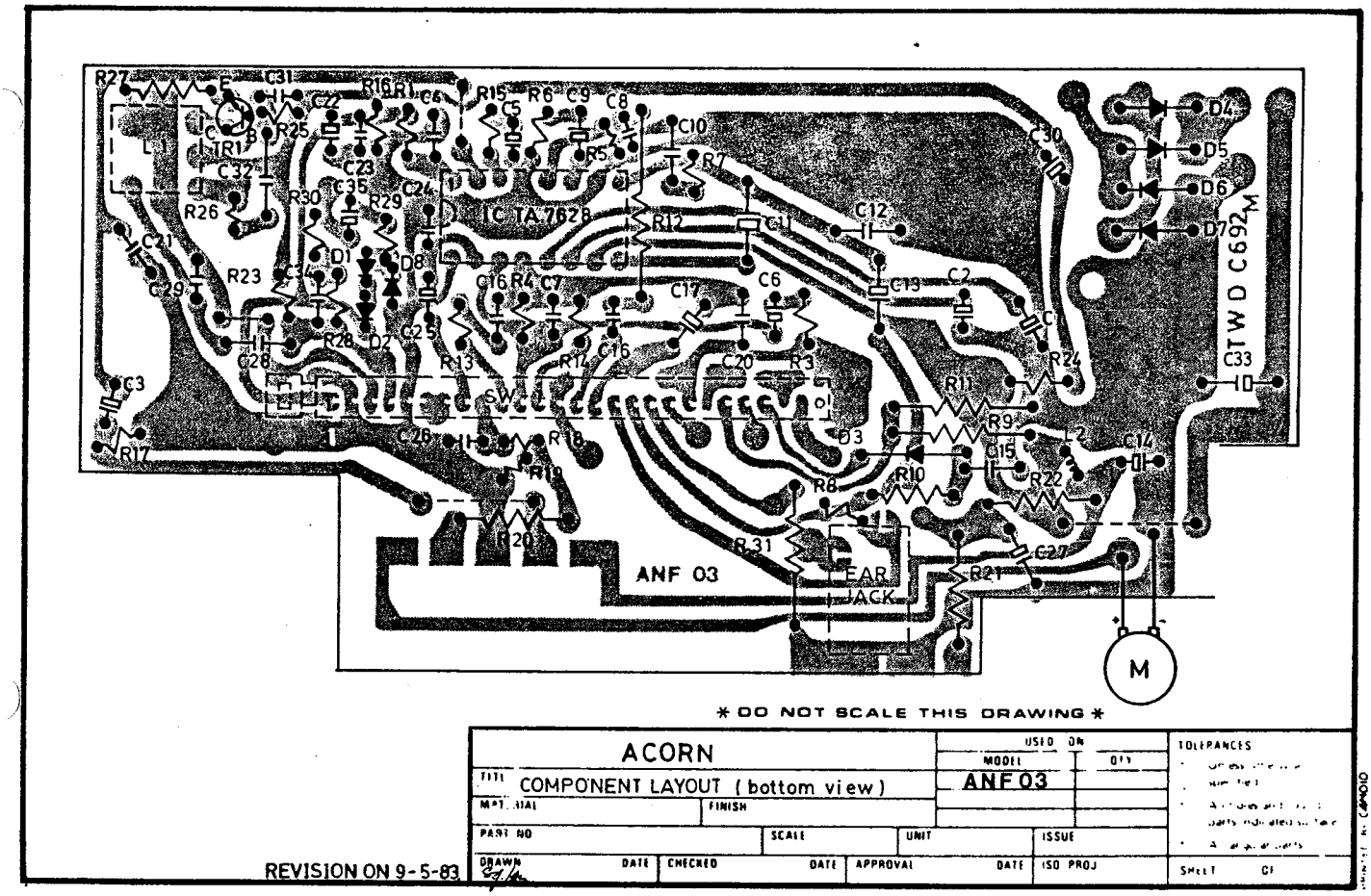
ACORN		USED ON	
TITLE SCHEMATIC DIAGRAM		MODEL ANF 03	QTY
MATERIAL	FINISH		
PART NO	SCALE	UNIT	ISSUE
DRAWN	DATE	CHECKED	DATE
APPROVAL	DATE	ISO PROJ	

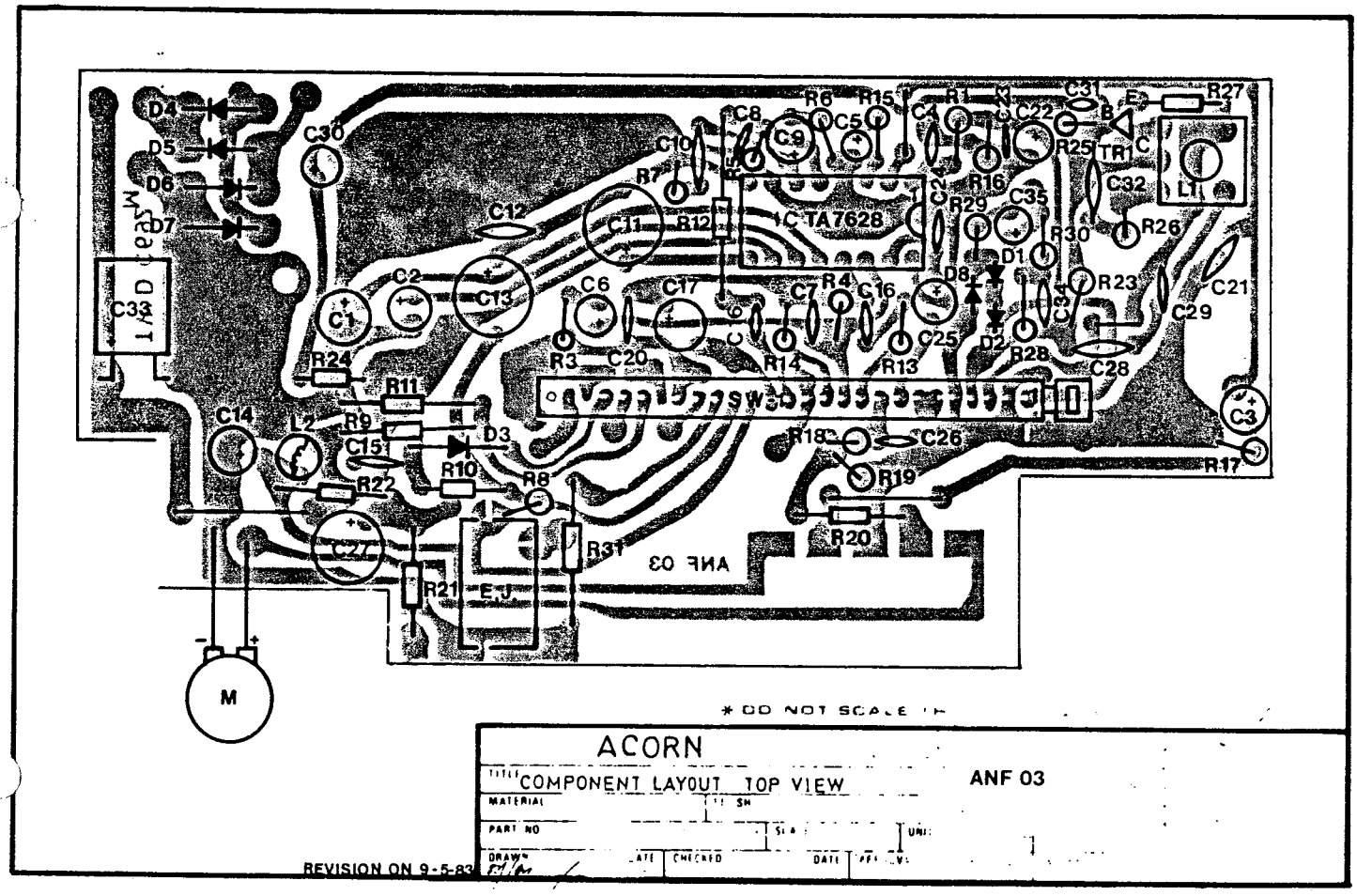
TOLERANCES
- Unless otherwise specified
- All holes and round parts machined surfaces
- All angular parts

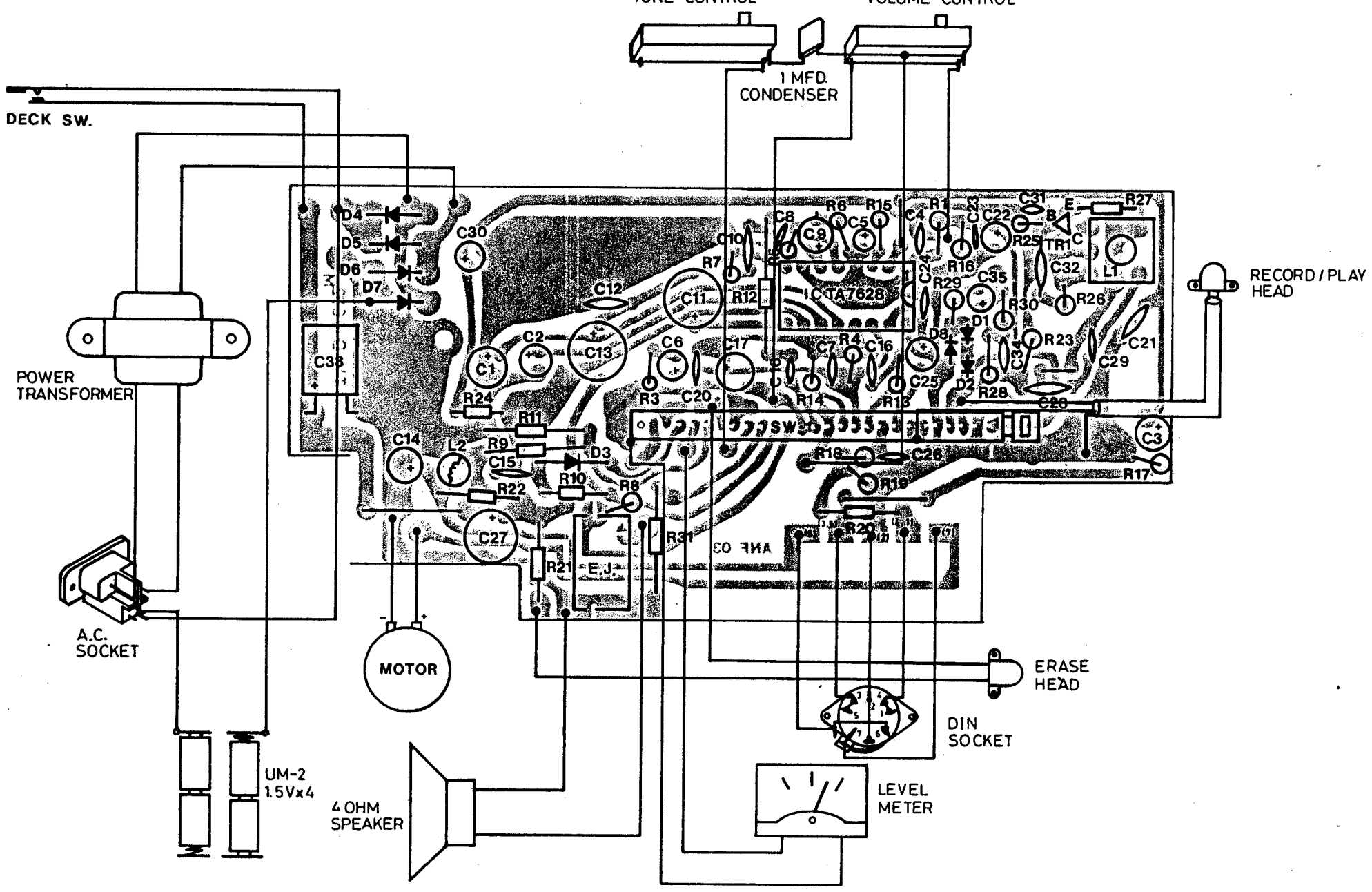
SHEET 01

REVISION 29-4-83.

5	4	2	4	July 84


IC TA7628
ANF 03
EAR JACK
M
* DO NOT SCALE THIS DRAWING *
ACORN
COMPONENT LAYOUT (bottom view)
ANF 03
REVISION ON 9-5-83


IC TA7628
ANF 03
M
ACORN
COMPONENT LAYOUT TOP VIEW
ANF 03
REVISION ON 9-5-83



* DO NOT SCALE THIS DRAWING *

ACORN			USED ON
TITLE WIRING DIAGRAM			MODEL ANF 03
MATERIAL	FINISH		
PART NO	SCALE	UNIT	ISSUE
DRAWN DATE	CHECKED DATE	APPROVAL	DATE

REVISION ON 9-5-83